fog along the steamship tracks west of the 40th meridian and at stations of the Weather Bureau along the middle Atlantic and New England coasts generally attended the approach or passage of general storms.

OCEAN ICE.

The region in which ice was reported for the current month is shown on Chart I by ruled shading. The southernmost ice reported, a small iceberg observed on the 11th in the position given, was nearly 4° north of the average southern limit of Arctic ice for February, and the easternmost ice noted, 2 small bergs sighted on the 8th in the position given in the table, was nearly 3° west of the average eastern limit of ice for February. Ice was reported during the month as follows: 8th, N. 49° 05′, W. 46° 20′, 2 small icebergs; N. 48° 34′, W. 48° 36′, several small bergs. 9th, N. 47° 48′, W. 52° 10′, 5 miles of field ice. 11th, N. 47° 25′, W. 47° 55′, a small berg. 12th, 10 miles east-northeast from Saint Johns, N. F., field of ice. 15th, N. 47° 40′, W. 48° 40′, an iceberg 25 feet out of water. 16th, N. 47° 59′, W. 48° 38′, several small floes of ice.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for February during the last 10 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
February, 1883	42 01	52 46	February, 1883	46 10	45 44
February, 1884	42 00	50 00	February, 1884	46 50	43 45
February, 1885	41 50	51 12	February, 1885	47 52	42 00
February, 1886	46 10	47 15	February, 1886	48 00	44 47
February, 1887	40 00	48 00	February, 1887	46 26	41 50
February, 1888	44 59	45 08	February, 1888	44 59	45 08
February, 1889	45 35	48 00	February, 1889	45 35	48 00
February, 1890	41 12	50 12	February, 1890	44 30	35 30
February, 1891	44 20	48 00	February, 1891	44 33	44 59
February, 1892	47 25	47 55	February, 1892	49 05	46 30
Mean	43 33	48 50	Mean	46 24	43 49

TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

Many of the voluntary stations do not have standard thermometers or shelters.

The distribution of mean temperature over the United States and Canada for February, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the departure is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest over the southern part of the Florida Peninsula, where it was above 65; it was above 60 over a great part of the Florida Peninsula, along the middle and west Gulf coasts, in Texas south of the 30th parallel, and at stations in the Colorado Desert in southeastern California; and was above 50 in the Gulf States, southern and western Arizona, southern California, and in California west of the Sierra Nevada Mountains and south of the 41st parallel. The lowest mean temperature was noted in Manitoba, where it was below zero; the mean readings were below 20 along the northern border of the country east of the 110th meridian, and in the Red River of the North and middle Missouri valleys; and values below 30 were reported north of a line traced from the south New England coast westward to the middle-eastern slope of the Rocky Mountains, thence to northern New Mexico, and thence irregularly northwestward to north-central Washington.

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was generally above the normal, except in the Atlantic coast states from Virginia over the Florida Peninsula. The greatest departure above the normal temperature, 10, was reported at Helena, Mont., and the excess was more than 5 over the northern plateau region, on the northeast slope of the Rocky Mountains, from Minnesota and Wisconsin over the lower Missouri valley, from northeastern Ontario to the Gulf of Saint Lawrence, and in the interior of eastern Texas. The most marked deficiency in temperature occurred along the North Carolina coast, where it was 2 to 3.

DEVIATIONS FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for February for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for February, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for February during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of Feb.	(2) Length of record.	(3) Mean for Feb., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for February.			
					Highest.	Year.	Lowest.	Year.
Arizona.	°	Years	°	°	°		°	
Fort Apache	39.6	20	40.9	+ 1.3	43.6	1879	32.4	1880
Fort Mohave	50.2	20	57.7	+ 1.5	62.0	1879	50.2	1882
Whipple Barracks	39.1	20	36.6	− 2.5	46.1	1879	30.0	1880
Arkansas.								
Lead Hill	41.1	10	.....	.....	49.9	1882	32.2	1885
California.								
Fort Bidwell	33.2	21	35.2	+ 2.0	42.8	1886	25.3	1874
Riverside	52.1	10	53.8	+ 1.7	58.0	1886	48.0	1891
Colorado.								
Las Animas	30.9	10	34.2	+ 3.3	37.9	1888	22.2	1883
Florida.								
Merritts Island	66.2	10	63.9	− 2.3	72.6	1883	58.0	1889
Georgia.								
Forsyth	52.4	18	54.9	+ 2.5	59.6	1890	44.5	1885
Idaho.								
Boise Barracks	34.1	18	29.9	− 4.2	40.3	1888	21.3	1883
Fort Sherman	26.9	9	.....	.....	37.0	1886	17.0	1887
Illinois.								
Centralia	33.0	13	38.0	+ 5.0	44.0	1880	22.0	1885
Indiana.								
La Fayette	28.8	12	35.0	+ 6.2	38.0	1882	14.7	1885
Indian Territory.								
Fort Supply	36.5	13	38.8	+ 2.3	44.1	1882	32.0	1883
Iowa.								
Cresco	15.4	20	23.3	+ 7.9	31.3	1878	1.0	1875
Kansas.								
Eureka Ranch	29.8	9	35.6	+ 5.8	37.6	1888	25.8	1885
Independence	35.5	20	41.1	+ 5.6	45.7	1882	25.2	1885
Salina	30.1	9	34.9	+ 4.8	37.0	1886	23.4	1885
Louisiana.								
Grand Coteau	59.3	9	60.6	+ 1.3	64.6	1887	52.4	1885
Maine.								
Orono	19.0	22	22.9	+ 3.9	25.0	1877	13.3	1885
Maryland.								
Cumberland	31.4	33	34.5	+ 3.1	40.0	1890	19.4	1868
Michigan.								
Kalamazoo	26.0	16	30.2	+ 4.2	35.0	1882	11.2	1885
Missouri.								
Chillicothe	30.9	8	41.2	+10.3	41.2	1892	23.0	1885
Sedalia	33.4	9	37.4	+ 4.0	45.9	1882	20.7	1885
Montana.								
Fort Custer	19.2	11	.....	.....	30.2	1886	2.4	1887
Nebraska.								
Fort Robinson	24.4	8	27.2	+ 2.8	33.7	1886	15.9	1891
Genoa (near)	22.0	16	26.0	+ 4.0	32.8	1877	13.2	1891
Nevada.								
Browns	37.6	21	39.8	+ 2.2	49.0	1872	24.8	1883
Carson City	34.0	15	34.2	+ 0.2	42.2	1886	23.9	1883
New Hampshire.								
Hanover	18.7	55	23.0	+ 4.3	27.2	1840	10.8	1885
New Mexico.								
Deming	47.8	10	50.4	+ 2.6	51.3	1887	41.8	1889
Fort Wingate	33.4	21	36.0	+ 2.6	40.0	1879	26.0	1880

Deviations from normal temperature—Continued.

State and station.	(1) Normal for the month of Feb.	(2) Length of record.	(3) Mean for Feb., 1892.	(4) Departure from normal.	(5) Extreme monthly mean for February.			
					Highest.	Year.	Lowest.	Year.
New York.	°	*Years*	°	°	°		°	
Cooperstown	21.2	38	23.2	+ 2.0	31.7	1857	10.5	1885
Plattsburgh Barracks	18.2	21	19.2	+ 1.0	25.7	1877	7.2	1885
North Carolina.								
Lenoir	40.5	19	41.8	+ 1.3	49.0	1890	30.3	1875
Oklahoma.								
Fort Reno	38.5	9	.....	.....	45.2	1890	33.0	1885
Fort Sill	42.5	20	47.8	+ 5.3	47.8	1892	35.6	1885
Oregon.								
Bandon	44.0	8	44.3	+ 0.3	49.2	1889	38.8	1887
Eola	39.6	21	41.6	+ 2.0	46.5	1885	31.0	1887
Pennsylvania.								
Dyberry	22.5	27	25.6	+ 3.1	30.1	1890	13.3	1868
Grampian Hills	25.0	27	28.5	+ 3.5	33.8	1890	13.7	1885
Wellsborough	26.8	12	26.9	+ 0.1	34.0	1890	16.7	1885
South Carolina.								
Statesburgh	50.4	11	48.8	— 1.6	56.6	1890	41.8	1885
South Dakota.								
Fort Sully	17.2	21	18.0	+ 0.8	33.4	1877	2.2	1887
Texas.								
Austin	54.7	20	57.1	+ 2.4	60.6	1890	48.9	1885
Silver Falls	46.4	6	47.8	+ 1.4	47.9	1886	41.0	1889
Utah.								
Terrace	30.4	19	33.6	+ 3.2	40.7	1886	16.0	1882
Vermont.								
Strafford	18.4	18	21.1	+ 2.7	25.7	1877	11.0	1885
Virginia.								
Dale Enterprise	37.1	12	35.6	— 1.5	44.8	1890	23.9	1885
Washington.								
Fort Townsend	40.1	20	39.9	— 0.2	47.0	1885	31.7	1887
West Virginia.								
Parkersburgh	38.3	11	37.3	— 1.0	48.0	1882	30.1	1889
Wisconsin.								
Embarrass	16.5	20	21.4	+ 4.9	30.7	1877	— 2.7	1875
Madison	20.8	25	24.8	+ 4.0	32.8	1878	3.2	1875
Wyoming.								
Fort Washakie	21.9	9	26.9	+ 5.0	35.8	1886	— 1.0	1883

YEARS OF HIGHEST MEAN TEMPERATURE FOR FEBRUARY.

The highest mean temperature for February occurred at Jacksonville, Fla., in 1891; in the middle and south Atlantic and south New England states, in the interior of the east Gulf states, generally in Louisiana, and on the west Gulf coast in 1890; over the northern plateau region in 1888; on the middle Gulf coast in 1887; on the middle and south Pacific coasts in 1886; on the north Pacific coast in 1885; from the east part of the Lake region southwestward over the Ohio, middle Mississippi, and lower Missouri valleys to east-central Texas, and in the lower Rio Grande valley in 1882; in northern Wisconsin and Upper Michigan in 1878; and in the middle Missouri valley, Minnesota, and on the Maine coast in 1877.

YEARS OF LOWEST MEAN TEMPERATURE FOR FEBRUARY.

The lowest mean temperature for February occurred at Valentine, Nebr., in 1891; along the south part of the Atlantic coast in 1889; on the middle and north Pacific coasts, and from the north Pacific coast to the Dakotas in 1887; from the Rocky Mountain slope eastward, south of the 40th parallel, to the Atlantic coast (save along the south part of the south Atlantic coast), and in New York and south New England in 1885; in the Red River of the North Valley in 1884; in northern Utah and Wyoming and thence to western Kansas and western Nebraska in 1883; from the south Pacific coast over the southern plateau region in 1882; and from the middle Missouri valley over the Lake region and northern New England in 1875.

MAXIMUM TEMPERATURE.

At Galveston, Tex., the maximum temperature for the current month, 75, was the highest ever reported for February, and the maximum at Brownsville, Tex., and Valentine, Nebr., was as high as previously reported for February.

The highest temperature reported at a regular station of the Weather Bureau, 89, was noted at Brownsville, Tex., on the 11th. Reports of voluntary observers show temperature 90 and above in the lower Rio Grande valley and in south-central Arizona and southeastern California. The maximum temperature was above 80 over the southern half of the Florida Peninsula, over a great part of east and southeast Texas, and in the Gila and lower Colorado valleys. The maximum temperature was lowest in the lower Red River of the North valley, northern Lower Michigan, and eastern Upper Michigan, where it was below 40, and the maximum readings were below 50 north of a line traced from southeastern New York westward to the middle Missouri valley, and thence northwestward to eastern Montana. The maximum readings were also below 50 at more elevated stations in the middle and northern Rocky Mountain regions.

MINIMUM TEMPERATURE.

The lowest temperature reported at a regular station of the Weather Bureau was —33, at Saint Vincent, Minn., on the 15th. The minimum temperature was below zero north of a line traced from the Maine coast to the north part of the middle plateau region and thence northeastward to western Montana, at elevated stations in the middle and northern Rocky Mountain and plateau regions, and at mountain stations in Virginia and West Virginia, and was below 20 north of a line traced from North Carolina to southern Illinois, thence to southeastern Arizona, and thence along the Sierra Nevada and Cascade mountain ranges to north-central Washington. The minimum temperature was highest over extreme southern Florida and in the lower Rio Grande valley, where it was above 50, and it was above 40 over the southern half of the Florida Peninsula, along the middle and west coasts of the Gulf of Mexico, in the San Joaquin valley in California, and on the middle California coast.

LIMITS OF FREEZING WEATHER.

The southern limit of freezing weather is shown on Chart V by a line traced from Charleston, S. C., and Savannah, Ga., westward to east-central Mississippi, thence northwestward to about the mouth of the Arkansas River, and thence west-southwest to the Rio Grande River. The western limit of freezing weather is shown by a line traced from south-central Arizona north-northwest along the Sierra Nevada Mountain range to northern California, and thence along the Oregon and Washington coasts.

TEMPERATURE, JANUARY AND FEBRUARY.

For the period January 1 to February 29, 1892, the mean temperature averaged about normal in the middle Atlantic states, the Ohio Valley and Tennessee, and the lower lake region. In the extreme northwest and over the northern plateau region the mean temperature averaged about 5, on the northeast slope of the Rocky Mountains about 4, in the Missouri valley about 3, in New England, the upper lake region, the upper Mississippi valley, on the middle-eastern slope of the Rocky Mountains, and on the north and middle Pacific coasts about 2, and in the west Gulf states, on the southeast slope of the Rocky Mountains, over the southern plateau region, and on the south Pacific coast about 1 above the normal temperature for the period named. In the south Atlantic states and at Key West, Fla., the mean temperature was about 2 deficient, and in the east Gulf states and over the middle plateau region the deficiency for that period was about 1.

RANGES OF TEMPERATURE.

The greatest daily range of temperature is shown in the table of miscellaneous meteorological data. The greatest monthly range of temperature, 74, was noted at Bismarck, N. Dak., and Fort Assinaboine, Mont. From the north-central districts the monthly ranges decreased eastward to less than 40 on the south New England coast and at Hatteras, N. C., southeastward to less than 30 over extreme southern Florida and along the Louisiana and east Texas coasts, and westward to less than 30 along the immediate Pacific coast from San Diego, Cal., to Tatoosh Island, Wash.

PERIODS OF HIGH TEMPERATURE.

On the 1st and 2d a warm wave advanced from the Lake region and upper Mississippi valley to the middle and south Atlantic states, attended by the highest temperature of the

month in the districts named. The morning report of the 5th showed a 24-hour temperature rise of 10 to 20 over the middle and east Gulf states, and the highest temperature of the month was noted in the Gulf States on the 5th and 6th. During the 6th a warm wave advanced from the Lake Superior region over the Ohio Valley and reached the Atlantic coast on the 7th, with a temperature rise of more than 20 from New England to Florida.

A warm wave appeared in the Northwest on the 9th, advanced to the Lake region and the Ohio Valley by the 10th, with a temperature rise of 30 to 40 in 24 hours in the middle Missouri valley, and extended over New England and the Canadian Maritime Provinces during the 11th. The morning report of the 12th showed a 24-hour temperature rise of more than 30 in the Northwest. The warm wave extended over the Missouri Valley during that date, over the Ohio Valley during the 13th, with a temperature rise of 20 to 30 from the upper Mississippi valley over Tennessee, reached the Atlantic coast on the 14th, and the morning of the 15th the 24-hour rise was 20 to 50 in New England. A marked rise in temperature occurred in the Northwest on the 15th; the morning report of the 16th showed a rise of more than 30 in Assiniboia and northeastern Montana; a rise of 30 to 50 occurred from the extreme upper Mississippi valley over the Lake Superior region by the morning of the 17th; and the warm wave reached the middle Atlantic and New England states during the 18th. No well defined warm waves traversed the districts east of the Rocky Mountains after the 18th.

PERIODS OF LOW TEMPERATURE.

On the 1st the temperature fell more than 20 in Kansas; during the 2d the cool wave advanced over the middle Mississippi and Ohio valleys, with a temperature fall of more than 20 in Oklahoma Territory and southern Missouri, and temperature below freezing to northern Texas and central New Mexico; and on the 3d reached the middle Atlantic coast, with a temperature fall of 20 in western Tennessee. The morning of the 5th a temperature fall of more than 20 was shown on the middle-eastern and southeast slopes of the Rocky Mountains, with zero temperature at North Platte, Nebr., and temperature below freezing in western Texas; during the 5th the temperature fell thence eastward to the middle Atlantic and New England coasts, and the morning of the 6th the temperature was below freezing in eastern Tennessee and along the Atlantic coast to South Carolina. On the 6th the temperature fell more than 20 in Manitoba and 10 to 14 over the southern Rocky Mountain region.

During the 7th a temperature fall of 10 to 20 occurred in areas from the western Lake region to Texas, and freezing weather was reported north of a line traced from northern Lower Michigan to southern New Mexico. Advancing eastward the cold wave reached the Ohio Valley on the 8th, with a temperature fall of more than 20 along the middle Ohio River, and reached the middle Atlantic coast unattended by severe cold on the 9th. The temperature fell more than 20 in the Northwest on the 10th; the cold wave extended to the Ohio Valley by the 11th, with temperature below zero in the eastern Dakotas and Minnesota, and freezing weather to southern Arkansas and central Texas; and reached the Atlantic coast states on the 12th, with a temperature fall of more than 20, and freezing weather to central Georgia and northern South Carolina.

The most important cold wave of the month appeared in the Northwest on the 13th, where the temperature fell 40 to 50, and was below zero in North Dakota, Manitoba, and the Saskatchewan Valley. During the 14th the cold wave advanced over the western Lake region and the lower Ohio valley, the temperature fell 20 to 30 from the southeast slope of the Rocky Mountains to Manitoba and the western Lake Superior region, and the line of freezing weather extended from southern New Mexico to the southern Lake region. On the 15th the temperature fall was 20 to 30 from the lower Mississippi valley over the Lake region, zero temperature was noted in northern Missouri and northern Illinois, the line of freezing weather extended from central Texas to Virginia, and the lowest temperature of the month occurred in north-central districts, the minimum being —20 to —30 in North Dakota and northern Minnesota. By the evening of the 15th the cold wave reached the middle Atlantic coast. The morning of the 16th a 24-hour temperature fall of more than 20 was noted along the middle Atlantic and New England coasts, and the line of freezing weather extended from Arkansas to the Virginia coast.

From the 16th to 19th a cold wave advanced from the northeast slope of the Rocky Mountains to the west Gulf states, with temperature falls of 20 to 30 during the 16th, 17th, and 18th. From the 25th to 27th a cold wave advanced from the northeast slope of the Rocky Mountains to New England and the Canadian Maritime Provinces, with temperature falls of 20 to 30, and in the lower Saint Lawrence valley the 24-hour fall in temperature was more than 40. From the 27th to 29th a moderate cold wave advanced from the Northwest over the central valleys.

FROST.

Frost was noted generally over the Florida Peninsula north of the 27th parallel on the 13th, and along the immediate middle coast of the Gulf of Mexico on the 1st, 13th, 17th, 26th, and 27th. No frost was reported in Texas south of the 30th parallel. Frost was reported on a number of dates in the mountains of central and northern New Mexico and eastern Arizona. Frost was reported on the Pacific coast as follows: In the Santa Lucia Mountains in Monterey Co., Cal., 7th, and 9th to 12th; at Alvarado, Alameda Co., Cal., on the 11th; at Sacramento, Cal., on the 2d, 3d, and 7th; at Eureka, Cal., on the 2d, 8th, 9th, and 14th; at Roseburgh, Oregon, on the 1st, 2d, 3d, 5th, 14th, and 15th; at Eola and Albany, Oregon, on a number of dates; at Astoria, Oregon, on the 16th and 17th; at Port Angeles, Wash., on the 6th, 17th, and 24th; and at East Sound, Wash., on the 2d to 8th, 13th, 14th, and 24th.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for February, 1892, as determined from the reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In February the monthly precipitation is usually greatest on the extreme north Pacific coast, where it exceeds 11.00 at Neah Bay, Wash. In areas on the immediate Pacific coast north of the 42d parallel, and along the line of the Central Pacific Railroad crossing the summit of the Sierra Nevada Mountains in California, the average precipitation for February exceeds 8.00, and it is 4.00 to 6.00 generally along the Pacific coast, and in the central valleys of California north of the 38th parallel. In an area extending southward over central Utah, and in the mountains of north-central Colorado the normal amount is 2.00 to 4.00. East of the Rocky Mountains the greatest precipitation is noted over a great part of the Gulf States east of the 95th meridian, and in parts of southern Tennessee, where it is more than 6.00, and the normal amount is generally greater than 4.00 in the Gulf States, Kentucky, Tennessee, the interior of the south Atlantic states, over the southwest and northern parts of the Florida Peninsula, and along the Atlantic coast